

VIII.—*Descriptions of new Species of Heteropterous Hemiptera collected in the Hawaiian Islands by the Rev. T. Blackburn.*
—No. 3. By F. BUCHANAN WHITE, M.D., F.L.S.

Scutelleridæ.

28. *Coleotichus Blackburnice*, n. sp.

C. elongato-obovatus, coccineus, puncturis aureo-viridibus et cyaneis confertim ornatus, marginibus lineaque centrali impunctatis; capite supra levissime, subtus forte convexo, apice obtuse rotundato, lateribus (postico excepto), tylo et linea centrali obtuse elevatis; antennis articulis primo secundoque subæquilongis, tertio, quarto quintoque longioribus et inter se subæquilongis; rostro coxas intermedias attingente; pronoto marginibus lateribus et ad angulos anticos subdepresso, his subincrassatis rectis, angulis lateralibus prominulis obtusiusculis; scutello abdomine subangustiore, linea centrali subelevata; prosterni lobis prostethioque postico subimpunctatis; ventris segmentis pone spiracula macula distinctius punctata destitutis, angulis apicalibus segmentorum secundi usque sexti distincte dentato-productis; segmento anali maris a basi sensim producto, medio transversim haud profunde depresso, apice subtruncato. Capite confertissime punctato, marginibus (postico inter ocellos excepto), linea centrali, et linea tenuiore utrinque prope basin et cum linea centrali parallela, necnon tylo lævigatis; pronoto intra margines anticum lateralesque subtilius et crebrius, disco rude et irregulariter punctato, marginibus maculis irregularibus prope marginem anticum et linea centrali impunctatis; scutello limbo perangusto et linea centrali lævigatis; elytris inter venas conferte punctatis, area magna triangulari ante membranam lævigata.

♂. Long. $16\frac{1}{2}$, lat. 8 m. m.

Of this fine species (which I have dedicated to Mrs. Blackburn) I am sorry that I cannot give a better description as regards the colour. I have described it as being scarlet on the authority of Mr. Blackburn, who has met with three specimens. The one sent to me is (perhaps from having been in alcohol) ochraceous brown in colour, thickly punctured with golden green and dark blue, and only showing a trace of the red ground-colour on the scutellum. Under these circumstances I have said as little as possible regarding the colour, reserving a description of that till I have seen other specimens. Mr. Blackburn remarks that this is one of the rarest of the Hawaiian Hemiptera, only three specimens having been taken, and these at long intervals. It occurs on flowers near Honolulu.

The occurrence of a species of the genus *Coleotichus* in the Hawaiian Islands is rather interesting, as the genus has hitherto

been confined to Australia or its more immediate vicinity. Of the five species previously described, two belong to Australia, one to New Caledonia and Woodlark, one to the Fiji Islands, and one to Amboina and Ceram. The Hawaiian Islands seem to have derived the progenitors of their Hemipterous fauna from all quarters; but our knowledge is yet too incomplete to allow of any speculation as to the direction whence the immigration has been strongest.

This species is intermediate between the sections "a" and "aa" (having some of the characters of both), into which Stål divided the genus in the 'Enumeratio.'

Lygæidæ.

29. *Nysius Blackburni*, n. sp.

N. oblongo-obovatus, niger, subnitidus, capite maculis oblongis magnis 3 inter oculos, tylo linea longitudinali, pronoto macula parva ad marginem anticum et disco postico pro magna parte, clavo maculis parvis, corio maculis majusculis præcipue prope marginem costalem sitis, necnon femoribus apicibus plus minus rufo-testaceis, membrana albida fusco-maculata. Capite pilosulo subtiliter punctulato; antennis rostro brevioribus, articulo secundo quam tertius multo longiore; rostro coxas posticas attingente, articulo primo bucculis subæquilongo; gula basin capitis subattingente; bucculis gula paullo brevioribus, subparallelis, retrorsum sensim humilioribus; pronoto rude punctato, rugis subelevatis (una centrali longitudinali, altera transversa et ante medium sita) subimpunctatis, angulis posticis elevatis lævigatis, longitudine latitudine postica $\frac{1}{4}$ minore, lateribus ad medium paullo sinuatis; scutello triradiatim calloso-rugoso punctato (ruga ad medium excepta); hemelytris pilosulis haud profunde punctato-rugulosis, corii marginis costalis parte quarta basali recta, deinde sensim rotundato-ampliatis; pedibus mediocribus; mesosterno sulcato, prostethio antice punctato; ventre capillis adpressis pallidis vestito.

♀. Long. 4, lat. $1\frac{1}{2}$ m. m.

Taken by sweeping ferns near the "Lake of Fire" on Mauna Loa, Hawaii, at an elevation of 4000 feet.

30. *Nysius nitidus*, n. sp.

N. elongatus, nitidus, glaber, pallide olivaceo-brunneus, subtus cum pedibus dilutior, capite capillis adpressis aurcis vestito, brunneo, tylo, linea longitudinali, orbitulis et tuberculis antenniferis ochraceis, antennis et rostro apice brunneis, his articulo primo (macula interiore excepta), articulis secundo tertioque ochraceis, articulis secundo tertioque ad medium brunnescenti-annulatis; pronoto puncturis, angulis posticis et macula ad medium marginis postici,

scutello basi puncturisque, hemelytris venis, corio angulo apicali lato, femoribus maculis, tibiis ad basin apicemque, tarsorum articulis apicibus, pectore puncturis, gula, linea inter pedes, mesosterno macula media, ventre ad basin necnon maculis connexivi plus minus brunneis vel picco-brunneis; membrana subhyalina. Capite paullo elongato, ruguloso; antennis gracilibus rostro brevioribus, articulo secundo tertio subæquilongo; rostro coxas posticas superante, articulo primo basin capitis attingente; gula basin capitis haud attingente; bucculis antice altis cito retrorsum humilioribus, plure quam dimidio postico maxime depresso et subæque alto, postice appropinquantibus; pronoto parce et rude punctato, disco longitudinaliter et transversim depresso, rugis longitudinali transversaque elevatis et angulis posticis elevatis lævigatis, longitudine latitudine postica $\frac{1}{4}$ minore, lateribus subsinuatis; scutello fortiter triradiatim calloso-rugoso, ad latera punctato; hemelytris (margine costali corii excepto) subtilius punctatis, sutura clavi biseriatim punctata, margine costali corii ad basin recto, deinde sensim rotundato et subampliato; pedibus medioeribus; mesosterno sulcato, margine postico paullo elevato.

♀. Long. 5, lat. $1\frac{3}{4}$ m. m.

At an elevation of 4000 feet, on Haleakala, Maui.

31. *Nysius nemorivagus*, n. sp.

N. oblongus, nigro-fuscus, rufescenti-ochraceo variegatus, subopaeus, parce pallide pilosulus, capite vitta longitudinali interrupta et maculis 2 inter oculos, tuberculis antenniferis apice, antennis articulo primo basi apiceque, articulis secundo tertioque apice, pronoto macula media antica, disco postico (puncturis, ruga longitudinali antice, et maculis 4 irregularibus ad marginem posticum exceptis), scutello apice, clavo maculis nonnullis parvis, corio maculis majusculis (præsertim in disco anticeo sitis) et margine costali dilatato (limbo angustissimo excepto), pectore ventreque maculis, femoribus (maculis permultis exceptis), tibiis (basi pro parte et apice exceptis), tarsis (articulo ultimo excepto) plus minus rufescenti-ochraceis vel ochraceis; membrana hyalina plus minus fusco variegata. Capite rude punctato; antennis rostro subæquilongis, articulo secundo tertio longiore; rostro coxas posticas subattingente, articulo primo bucculis æquilongo; gula capitis basin attingente; bucculis gula brevioribus antice subaltis, in medio sensim retrorsum humilioribus, postice citius humilioribus et ante apicem gulæ evanescentibus; pronoto rude punctato, ruga longitudinali præcipue postice, ruga transversa et angulis posticis elevatis lævigatis, lateribus subsinuatis, longitudine latitudine postica minore; scutello rude punctato, ruga longitudinali impunctata; hemelytris vix et tenuissime punctulatis, corio margine costali ad basin recto, deinde sensim rotundato-ampliato; pedibus medioeribus; mesosterno sulcato, postice submarginato; ventre segmento quarto postice truncato.

♀. Long. 5, lat. $1\frac{1}{2}$ m. m.

Mauna Kea, Hawaii, and Haleakala, Maui, at an elevation of 5000-6000 feet.

In the specimen described above the membrane is almost unicolorous; in others it is more or less variegated with fuscous.

32. *Nysius rubescens*, n. sp.

N. oblongus, ochraceo-rufescens, capillis adpressis pallidis vestitus, capite macula magna utrinque oculum includente et ad apicem jugæ percurrente, pronoto vitta lata transversa ante lobum posticum sita et puncturis, scutello basi puncturisque, hemelytris maculis parvis, corio limbo antico angustissimo necnon maculis 3 majusculis ad marginem apicalem fusco-nigris; antennis, rostro pedibusque lutescentibus, antennarum articulo ultimo, rostri articulis tertio quartoque, et tarsorum apicibus brunneis vel piceo-brunneis, hemelytris dilutioribus, margine costali dilatato innotato, scutello apice, bucculis, coxis atris ad apicem et acetabulis secundis tertiisque ochraceis, pectore ventreque nigris capillis albidis vestitis, prostethio marginibus, ventre segmentis quarto, quinto sextoque ad medium, et segmentis genitalibus pro parte rufescentibus, membrana albido-hyalina pallide fusco-nebulosa. Capite punctato; antennis rostro paullo brevioribus, articulo secundo quam tertius multo longiore; rostro coxas posticas superante, articulo primo et gula basin capitis attingentibus; bucculis gula paullo brevioribus, retrorsum sensim humilioribus et evanescentibus; pronoto rude punctato, ruga transversa in medio interrupta, macula ante medium marginis postici, margine et angulis elevatis posticis lævigatis, ruga longitudinali obsoleta, longitudine latitudine postica minore, lateribus fere rectis; scutello rude punctato, ruga longitudinali lævigata; corii margine costali ad basin recto, deinde sensim rotundato-ampliato; pedibus mediocribus; mesosterno sulcato, postice marginuato.

♀. Long. 5, lat. $1\frac{3}{4}$ m. m.

On ferns near the "Lake of Fire" on Mauna Loa, Hawaii, at an elevation of 4000 feet.

33. *Nysius pteridicola*, n. sp.

N. ovato-oblongus, brunneo-ochraceus, brunneo variegatus, glaber subnitidus, capite, antennis articulis secundo tertioque ad basin angustissime, rostro articulo ultimo, pronoto ruga transversa puncturisque, scutello, hemelytris puncturis, corio limbo costali angustissimo et angulo apicali, tarsis apicibus necnon corpore subtus plus minus brunneis vel piceo-brunneis; antennis, rostro, pedibus et prostethii margine postico rufo-brunneis; pronoto ruga longitudinali postice et angulis posticis, scutello apice necnon hemelytris venis plus minus pallide ochraceis; membrana albido-hyalina. Capite rugoso; antennis rostro multo brevioribus, articulo secundo tertio longiore; rostro coxas posticas superante, articulo primo basin capitis superante; gula longitudine capitis

$\frac{1}{4}$ minore; bucculis gulæ fere æquilongis, antice altis, retrorsum cito humilioribus, pone gulam concurrentibus; pronoto rude et dense punctato, ruga transversa et ruga longitudinali fere obsoleta subimpunctatis, angulis posticis lævigatis, longitudine latitudine postica $\frac{1}{4}$ minore, lateribus fere rectis; scutello dense et rude punctato fortiter triradiatim rugoso-callosa, ruga longitudinali lævigata; hemelytris dense subtilius rugoso-punctulatis, sutura clavi biseriatis punctata, margine costali fere a basi sensim rotundato et subampliato; pedibus crassis; mesosterno sulcato, postice marginato; ventre segmento quarto postice truncato, segmento quinto obtuse emarginato longitudine media longitudinis lateralis parti quartæ æquilonga.

♂ et ♀. Long. $4\frac{1}{2}$ –6, lat. $1\frac{1}{2}$ –2 m. m.

Near the "Lake of Fire" on Mauna Loa, Hawaii, at an altitude of 4000 feet.

34. *Nysius vulcan*, n. sp.

N. præcedenti (*Nysio pteridicolæ*) persimilis, differre videtur pronoto remotius punctato, margine costali dilatato corii paullo ampliore, bucculis magis abrupte et minus sensim retrorsum humilioribus, antennarum articulo secundo tertio vix longiore, et præcipue ventris segmento quarto postice angulariter sinuato haud truncato.

♂. Long. $5\frac{1}{2}$, lat. $1\frac{3}{4}$ m. m.

Mauna Loa, Hawaii.

Very like *Nysius pteridicola* (no. 33) in coloration and general appearance; but the different form of the fourth ventral segment, as well as the other points noted, will serve to separate them. The coloration of the underside differs in a few particulars; but having seen one specimen only, I cannot be sure whether this will afford a constant character.

The Hawaiian Islands seem to be very rich in species of *Nysius*, no less than ten species (all peculiar) having been found there; and of these Mr. Blackburn has discovered nine. When there is reason to believe that the total number of species occurring in the islands is (comparatively) completely known, it will be desirable to give an analytical table of them; in the meantime I have been obliged to describe each at some length, as the species of this genus are often very similar in general appearance.

Nysius must, from its wide distribution, and especially from the occurrence of species in many oceanic islands, be a genus of great antiquity.

35. *Cymus calvus*, n. sp.

C. niger opacus, tylo apice, tuberculis antenniferis, collo loboque postico pronoti, scutello apice, oculis ocellisque, prostethio margi-

nibus antico et postico, metastethio margine postico necnon acetabulis rufo-brunneis; antennis, pedibus hemelytrisque pallide brunneo-flavescens; antennis basi et articulo ultimo, coxis, trochanteribus et femoribus ad basin, clavi commissura, pronoto ad marginem posticum, hemelytrorum puncturis et corii angulo apicali plus minus pallide vel saturate brunneis; abdomine ferrugineo-testaceo, ad basin fuseo, incisuris pallidioribus, capillis sericeis tenuissimis vestito; pedibus rostroque brunneo-ochraceis, illo apice piceo-brunneo; membrana albida. Capite cum oculis latiore quam longiore, subtiliter punctato, jugis subprominulis et acutiusculis; antennarum articulo primo capitis apicem superante, secundo tertio tertioque quarto longiore; rostro mesosterni medium attingente, articulo primo medium prosterni haud superante; pronoto capillis tenuissimis parcissime vestito, sat rude punctato, anterieus rotundato-angustato et hoc modo collo lato instructo, ad medium leviter constricto et transversim impresso, quam margo posticus paullo longiore, margine postico sinuato, ruga centrali longitudinali obsoleta, marginibus antico posticoque, area utrinque lobi anterioris necnon vitta longitudinali ad angulum posticum lævigatis; scutello rude punctato (rugis distinctis longitudinali et transversa exceptis); clavo rude punctato; corio ad margines interiorem et apicalem serie punctorum instructo, disco rude punctato, margine lato costali et area intima a basi ad marginem apicalem extensa lævigatis; pectore punctato, mesosterno obsolete longitudinaliter sulcato; abdomine apicem corii longe superante.

♀. Long. 5, lat. pronoti posterioris $1\frac{1}{2}$ m. m.

Very rare. Under stones on the mountains near Honolulu, at an elevation of about 2000 feet.

Though I have placed this and the following species in the genus *Cymus*, they seem to differ from it in some particulars, as, for example, in the shorter rostrum, in which point they approach the genus *Arphnus* of Stål, from which, however, the tylus not or scarcely exceeding the bucculæ appears to exclude them. Consequently I have described the species at greater length than I would otherwise have done. The genus *Cymus*, though a small one, is widely distributed, having representatives in the Palæarctic, Oriental, Nearctic, Neotropical, and Australian Regions, and a closely-allied genus in the Ethiopian Region.

It may be noticed that the specimen described above has the second and third joints of the right antenna fused into one, a not uncommon malformation in the *Lygæidæ*.

36. *Cymus criniger*, n. sp.

C. griseo-flavescens, capillis crassiusculis pallidis sat bene vestitus; capite, pronoti lobo antico vitta transversa lata, scutello basi, corii clavi que angulis apicalibus necnon corpore subtus atris;

antennis pallide rufo-brunneis, articulo ultimo præcipue ad apicem, tuberculis antenniferis, tylo apice, scutello, prostethii margine antico, acetabulis externe, sternorum abdominisque incisuris saturatioribus; rostro pedibusque brunneo-testaceis, illo ad apicem fusco, horum coxis, trochanteribus et femoribus ad basin fusco-ferrugineis, femoribus subtus fusco maculatis; membrana albida. Capite cum oculis latiore quam longiore, jugis subprominulis et acutiusculis, antennis articulo primo apicem capituli superante, secundo tertio et tertio quarto longiore; rostro coxas anticas vix superante, articulo primo marginem anticum prostethii paullo superante; pronoto punctato, anterius in collum subangustato, lateribus leviter sinuatis, ruga longitudinali obsoleta, disco anterius utrinque, marginibus angustis antico posticoque et linea brevi subelevata ad angulos posticos elevatos lævigatis; scutello (ruga longitudinali excepta) punctato; hemelytris rude punctatis, margine costali dilatato impunctato; mesosterno distincte longitudinaliter sulcato; abdomine apicem corii longe superante.

♀. Long. 5, lat. pronoti posterioris $1\frac{1}{2}$ m. m.

Very rare. Under stones on Haleakala, Maui, at an elevation of 5000 feet.

Though in stature and general appearance resembling the preceding species, this is very distinct from it. It is rather stouter and also broader behind.

Anthocoridæ.

37. *Dilasia* (?) *denigrata*, Buchanan White.

Dilasia (?) *denigrata*, Buchanan White, E. M. M. xvi. 146. 11.

On trees, at an elevation of about 3000 feet, on Mauna Kea, Hawaii.

38. *Dilasia* (?) *decolor*, Buchanan White,

Dilasia (?) *decolor*, Buchanan White, E. M. M. xvi. 147. 12.

On trees in mountain forests near Honolulu.

39. *Lilia dilecta*, Buchanan White.

Lilia dilecta, Buchanan White, E. M. M. xvi. 147. 13.

On trees at an altitude of about 5000 feet, on Haleakala, Maui.

The genus *Lilia* was constituted for the reception of this species, which, with nos. 37 and 38, has been found in the Hawaiian Islands only.

Emesidæ.

PLOIARIODES, n. g.

Caput antice convexiusculum, postice globoso-reflexum. Thorax

trapezoidalis, pronoto marginibus rotundatis, disco ante marginem posticum tuberculo elevato armato. Hemelytra apicem abdominis paullo superantia, corio clavoque augustissimis. Pedes antici corporis dimidio vix longiores, femoribus ad basin biserialiter setuloso-dentatis, trochanteribus haud dentatis, tarsis triarticulatis. Abdomen elongato-obovatum, marginibus reflexis.

Very like *Ploiaria*, Scop., differing only in the unreflexed side margins and tuberculate hind margin of the pronotum.

40. *Ploiariodes Whitei*, Bln., n. sp.

P. pallide ochraceo-brunnea, antennis, pedibus hemelytrisque dilutioribus, his fusco-brunneo maculatis, illis fusco-brunneo annulatis; pedibus subtilissime pilosis; antennis ♂ parce longipilosis.

♂ et ♀. Long. $6\frac{1}{2}$, lat. pronoti 1, lat. corp. postici $1\frac{2}{3}$ m. m.

Beaten from dead branches of trees at an elevation of about 4500 feet, on Mauna Loa, Hawaii.

BIBLIOGRAPHICAL NOTICES.

A Treatise on Comparative Embryology. By FRANCIS M. BALFOUR, M.A., F.R.S. Vol. I. Svo. London: Macmillan, 1880.

AMONG the numerous benefits for which zoologists must own their indebtedness to Mr. Darwin, one of the greatest is undoubtedly the impulse given, by the enunciation of his theory of the origin of species, to the study of the embryology of animals. Of course there were embryologists in pre-Darwinian times, and many of the facts revealed by them were among the most interesting offered for the contemplation of naturalists; but the doctrine of the origin of species by descent with modification immediately invested these facts with a new interest. There seemed to be at once a confirmation and a key given to that reproduction in developmental forms of the higher animals of the characteristics of more lowly organisms, which was long since, if somewhat vaguely, recognized. It was only natural to conclude that, if the different living types were genetically related, some trace of the line of descent ought to be found in the phases which they passed through between the first appearance of the embryo and its assumption of the adult form; and observation showed that in fact in many cases the ontogeny of the individual might fairly be regarded as furnishing an abridged sketch of the ancestral development or phylogeny of the species. Of course those naturalists who objected to the doctrine of the genetic evolution of organisms were free also to object to the phrases in which such conclusions as these are couched; but at the same time it must be admitted that the